

received specimens, it was first noted in Honolulu on domestic pigeons in October, 1910 (Proc. Hawaiian Ent. Soc., vol. 2, 1912, p. 188). Mr. E. M. Ehrhorn reported that the species had become very common on the pigeons in Honolulu by December, 1911 (l. c., p. 206).

## DESIGNATIONS OF MUSCOID GENOTYPES, WITH NEW GENERA AND SPECIES

BY CHARLES H. T. TOWNSEND

The writer has recently completed a critical catalogue of all the generic names that have been proposed in the Muscoidea, embracing the world's fauna, recent and fossil, with validly designated genotype for each. Although the subject has been fully elaborated to include, among other things, the actual sense of the authors concerned so far as possible to determine same, ascertained at a cost of great labor, especially translating Brauer and Bergenstamm's sense throughout, and would thus be very useful for reference, yet its publication at this time would avail comparatively little else on account of the large number of nomenclatorial cases involved for which there are as yet no rules or decisions of the International Commission to cover, and which must be left open for future ruling. The designations of genotypes for those genera with status as yet unsettled will occupy but little space; they are given in the present paper, together with a few new genera and species that are necessary in order to validate certain designations and establish the sense of authors concerned.

The great majority of muscoid genera are monobasic, and a very large part of the remainder already possess validly designated genotypes. Less than 140 muscoid generic names remain without designations or with designations whose validity is at all doubtful. The writer has personally verified all the genotype designations of Latreille (1810), Curtis (1826-38), Macquart (1834-43), Westwood (1840), Blanchard (1840), Zetterstedt (1844), Rondani (1856), Desvoidy (1863), Brauer and Bergenstamm (1889-94), Brauer (1893),

Townsend (1908-15), and Coquillett (1910). A designation has been considered invalid, or at least doubtful, (*a*) when no originally included specific name is used to designate the genotype, unless the name used is indicated in the context as equal to one of the originally included names; (*b*) when two or more of the originally included specific names are so used, or indicated in the context as equal to the name used.

When a designation of a previous author by a name not originally included is quoted in a purported list of genotypes, and one of the originally included names is mentioned as synonymous with that name, the quoting author, though not specifically stating his intention to make a genotype designation, may reasonably be considered as doing so; yet, since some doubt may arise on this point, I have repeated the designations below in such cases.

As to Brauer and Bergenstamm's designations, the writer holds that they are valid when not conflicting with the established procedure (*vide* *Ins. Ins. Mens.*, III, 121-122); but, pending decision by the International Commission on this point, their designations are here repeated in cases not otherwise covered, in order to secure immediate finality for the same. In this connection, Coquillett has quoted a few of Brauer and Bergenstamm's designations because they used the word "Type" in connection with an originally included species, not understanding that in nearly all cases holotype (or paratype) was meant by them, as is evident from the context and the statements made by them in their introduction.

### DESIGNATIONS

In order to economize space, only the essentials are given in the following list of genotype designations, the names of the authors of genera and species being intelligibly abbreviated, and the word genotype being understood to precede the species designated. No synonymy is indicated, either generic or specific. This is all recorded in the literature, so far as determined. A few cases are covered by new specific names at the end. The sense of previous authors is preserved so far as

possible, giving preference to that of Brauer and Bergenstamm. Those genera marked with an asterisk are considered in the notes at the end.

- Acrophaga BB (1891) *Acrophaga stelviana* BB.
- Agria RD (1830) *Agria punctata* RD.
- Alophora RD (1830) *Phasia hemiptera* Mg.
- Ananta Mg. (1838) *Phasia lateralis* Mg.
- Aplomya RD (1830) *Aplomya nitens* RD.\*
- Araba RD (1830) *Tachina fastuosa* Mg.
- Argyrella RD (1863) *Argyrella dissimilis* RD.
- Bengalia RD (1830) *Bengalia labiata* RD.
- Blissonia RD (1863) *Blissonia cæsia* RD.
- Blondelia RD (1830) *Blondelia pallidipalpis* RD.
- Bonellia RD (1830) *Bonellia tessellans* RD.
- Bonnetia RD (1830) *Bonnetia cenanthis* RD.
- Calcager Hutton (1901) *Calcager apertum* Htt.
- Callitroga Brauer (1883) *Musca dux* Eschsch.\*
- Calyptia RD (1863) *Calyptia carcæli* RD.\*
- Carcelia RD (1830) *Carcelia bombylans* RD.
- Cerosomyia Htt. (1901) Mono-basic.\*
- Chætopthalmus BB (1891) *Micropalpus brevigaster* Mcq.
- Chætostevenia Br. (1895) *Stevenia partenopea* Rdi.
- Chœromyia Roub. (1911) *Chœromyia chœrophaga* Roub.
- Chrysomya RD (1830) *Chrysomya regalis* RD.
- Clytho RD (1830) *Clytho aurulenta* RD.
- Comyops Wulp (1891) *Comyops nigripennis* Wp.
- Cosmina RD (1830) *Cosmina fuscipennis* RD.
- Craticula Pand. (1895) *Craticula frontale* Pd.
- Ctenocnemis Kowarz (1873) *Masicera major* Mcq.
- Ctenophorocera BB (1891) *Ctenophorocera experta* BB.
- Cylindrosoma Rdi. (1856) Mono-basic.\*
- Cytoria RD (1863) *Nyctia servillei* RD.
- Dasyphora RD (1830) *Dasyphora agilis* RD.
- Dexia Mg. (1826) *Musca volvulus* F.\*
- Dinera RD (1830) *Dinera grisea* RD.
- Disjunctio Pd. (1894-6) *Sarcophaga tetripunctata* Duf.
- Duponchelia RD (1863) *Duponchelia silvestris* RD.
- Elachipalpus Rdi. (1850) Mono-basic.\*
- Elomya RD (1830) *Elomya claripennis* RD.
- Elophoria RD (1830) *Elophoria myoidea* RD.
- Empheremyia Bisch. (1904) *Empheremyia atra* BsCh.
- Entomobia Lioy (1864) *Tachina festiva* Mg.
- Epineura BB (1891) *Phasia helva* Wd.

- Erycia RD (1830) Erycia grisea RD.  
 Estheria RD (1830) Estheria imperatoriaæ RD.  
 Etheria RD (1863) Etheria pedicellata RD.  
 Eugenia RD (1863) Eugenia fugax RD.  
 Euphoria RD (1863) Euphoria nitidula RD.  
 Eurychæta BB (1891) Monobasic.\*  
 Fausta RD (1830) Fausta nigra RD.  
 Feria RD (1830) Feria rubescens RD.  
 Gesneria RD (1830) Gesneria erythrocera RD.  
 Gesneriella Villve. (1912) Gesneriella unicolor Vve.  
 Glossidionophora Bgt. (1885)  
   Glossidionophora nigra Bgt.  
 Gymnodexia BB (1891) Dexia triangulifera Ztt.  
 Gymnostylia Mcq. (1835) Macromya depressa RD.  
 Halidaya Egg. (1856) Halidaya aurea Egg.  
 Harrisia RD (1830) Harrisia scutellaris RD.  
 Harrisia Mg. (1838) Tachina ænea Mg.  
 Hermya RD (1830) Hermya afra RD.\*  
 Himera RD (1863) Himera scutellaris RD.  
 Homodexia Bgt. (1885) Homodexia obscuripennis Bgt.  
 Homogenia Wp. (1892) Homogenia rufipes Wp.  
 Icelia RD (1830) Icelia flavescens RD.  
 Idia Wd. (1820) Musca lunata F.
- Illigeria RD (1830) Illigeria atra RD.  
 Ismenia RD (1863) Erycia villica RD.  
 Javetia RD (1863) Macquartia germanica RD.  
 Kirkia Gdst. (1914) Kirkia blanchardi Gdst.  
 Labidogyne BB (1889) Tachina forcipata Mg.  
 Leptotachina BB (1891) Monobasic.\*  
 Leschenaultia RD (1830) Leschenaultia cilipes RD.  
 Lilæa RD (1863) Lilæa aurozonata RD.  
 Lissoglossa Villve. (1913) bequaerti Vve.  
 Macquartia RD (1830) Macquartia rubripes RD.\*  
 Macromya RD (1830) Macromya depressa RD.  
 Marshamia RD (1830) Marshamia analis RD.  
 Marsilia Moncx. (1863) Onesia floralis RD.\*  
 Marsilia Rdi. (1861) Marsillia collina Rdi.  
 Megistogaster Mcq. (1851) Megistogaster fuscipennis Mcq.  
 Melinda RD (1830) Melinda cærulea RD.  
 Metallea Wp. (1880) Metallea notata Wp.  
 Metopodia BB (1891) Miltogramma grisea Mg.  
 Micropalpus Mcq. (1834) Bonnetia oenanthis RD.  
 Mintho RD (1830) Musca compressa F.  
 Minthodexia BB (1891) Minthodexia gravipes BB.  
 Mollia RD (1863) Mollia obscurella RD.

- Morellia RD (1830) Morellia agilis RD.
- Mormonomyia BB (1891) Mormonomyia laniventris BB.
- Myiophasia BB (1891) Mono-basic.\*
- Myobia RD (1830) Myobia fragilis RD.
- Myocera RD (1830) Myocera longipes RD.
- Nemoræa RD (1830) Nemoræa bombylans RD.
- Neocalliphora BB (1891) Calliphora ochracea Sch.
- Neomintho BB (1891) Tachina macilenta Wd.
- Nyctia RD (1830) Nyctia carceli RD.
- Occisor Htt. (1901) Occisor insitus Htt.
- Oestroides Gdlst. (1912) Oestrus mackdonaldi Gdlst.
- Omalogaster Mcq. (1834) Billaea grisea RD.
- Omalostoma Rdi. (1862) Omalostoma fortis Rdi.
- Omotoma Lioy (1864) Tachina amoena Mg.
- Onesia RD (1830) Onesia floralis RD.
- Opesia RD (1863) Opesia gagatea RD.
- Ophelia RD (1830) Ophelia gracilis RD.
- Orizia RD (1863) Orizia conjuncta RD.
- Orthellia RD (1863) Orthellia rectinervis RD.
- Pachygraphia BB (1891) Dexia virgata Wd.
- Pachymyia Mcq. (1843) Mono-basic.\*
- Pales RD (1830) Pales florea RD.
- Parachæta Cqt. (1897) Mono-basic.\*
- Paralucilia BB (1891) Mono-basic.\*
- Peremptor Htt. (1901) Peremptor egmonti Htt.
- Pexomyia BB (1891) Masicera rubifrons Perr.
- Phænicia RD (1863) Phænicia concinna RD.
- Phryno RD (1830) Phryno agilis RD.
- Phumosia RD (1830) Phumosia abdominalis RD.
- Phyto RD (1830) Phyto nigra RD.
- Pierretia RD (1863) Pierretia præcox RD.
- Podotachina BB (1891) Tachina sorbillans Wd.
- Pœciliometopa Vllve. (1913) Sarcophaga spilogaster Wd.
- Proscissio Htt. (1901) Proscissio montana Htt.
- Ptilocera RD (1830) Ptilocera palpalis RD.
- Ptilops Rdi. (1857) Ptilops adolezens Rdi.
- Pyrellia RD (1830) Pyrellia vivida RD.
- Rhamphina Mcq. (1835) Stomoxys pedemontana Mg.
- Rhinophora RD (1830) Rhinophora gagatea RD.
- Rœselia RD (1830) Rœselia arvensis RD.
- Rutilia RD (1830) Rutilia vivipara RD.
- Scotiptera Mcq. (1835) Sophia punctata RD.
- Senometopia Mcq. (1834) Carcelia aurifrons RD.
- Sepimentum Htt. (1901) Sepimentum fumosum Htt.

- Sericocera Mcq. (1834) Musca volvulus F.  
 Silbomyia Mcq. (1843) Musca fuscipennis F.  
 Solieria RD (1848) Solieria brunnicosa RD.  
 Sophia RD (1830) Sophia filipes RD.  
 Spathipalpus Rdi. (1863) Spathipalpus philippii Rdi.  
 Sphixapata Rdi. (1859) Sphixapata albifrons Rdi.  
 Sphora RD (1830) Sphora nigricans RD.  
 Syntomogaster Sch. (1861) Tachina singularis Egg.  
 Telothyria Wp. (1890) Telothyria cupreiventris Wp.  
 Thelaira RD (1830) Thelaira abdominalis RD.  
 Thelairodes Wp. (1891) Homodexia vittigera Bgt.
- Thelesina Moncx. (1863) Onesia floralis RD.\*  
 Theone RD (1863) Theone trifaria RD.  
 Thereuops BB (1891) Miltonogramma brevipennis Sch.  
 Trichodischia Bgt. (1885) Trichodischia soror Bgt.  
 Tripanurga BB (1891) Sarco-phaga albicans Wd.  
 Tryphera Mg. (1838) Tachina lugubris Mg.  
 Urophylla BB (1889) Urophylla leptotrichopa BB.  
 Velocia RD (1863) Velocia curatoria RD.  
 Walkeria RD (1863) Walkeria lauta RD.  
 Zaida RD (1830) Zaida agilis RD.  
 Zophomyia Mcq. (1835) Musca temula Scop.

#### NOTES, NEW NAMES AND NEW GENERA

*Aplomya* RD.—Desvoidy's designation is invalid as not originally included, being *Phryxe zonata*, Myod., 159 (not *Aplomya zonata*, Myod., 185).

*Callitroga* Br.—On page 645, Journ. Wash. Acad. Sci., V, the writer stated that the publication of this name did not validate it for use, since it was cited in synonymy. It has nomenclatorial standing, but was published as a synonym of *Compsomyia* minus the *Calliphora* element. As such, it takes same genotype as *Compsomyia* thus restricted.

*Calyptia* RD.—This genus is not to be confused with *Calyptidia* RD, misspelled on page 59, vol. II, Posth., and corrected in the errata at end of volume.

*Cerosomyia* Htt.—The holotype of *C. usitata* seems to be a fly whose ptilinum has dried while exserted. It may easily prove to be a previously described species.

*Cylindrosoma* Rdi.—Genotype, CYLINDROMYIOPSIS BEZZII Townsend, new name for *Tachina sanguinea* Rdi. (nec Mg.)

preocc., 1856, Prod. I, 79. Named in honor of Dr. M. Bezzi.

Dexia Mg.—Designation by Westwood, Intr. II, 139. BB's sense is Dexilla Westw. Introduced to point out Coquillett's misconstruction of Westwood. Changes the family name Minthoidae to Dexiidae.

Elachipalpus Rdi.—Genotype, ELACHIPALPUS RONDANII Townsend, new name for *Micropalpus longirostris* Rdi. (nec Mcq.) preocc., 1850, N. Ann. Sci. Nat. Bologna (3), II, 169. Named in honor of Camillo Rondani. It is to be noted that this species and the second preceding, also many others, will stand as genotypes only in case the sense of the author of the genus is adopted.

Eurychæta BB.—The publication of this MSS. name (Musc. Schiz. II, 63) as equal to *Theria* RD not only gave it nomenclatorial standing, according to Opinion 4 of the International Commission, but also validated it for use in place of the preoccupied *Theria* RD, whose genotype it takes.

Hermya RD.—According to the sense of Opinion 6 of the International Commission, Brauer and Bergenstamm fixed *Hermya afra* as the genotype of *Hermya* by erecting *Paraphania* (1889) for *Ocyptera diabolus* Wd., of which *Hermya hottentota* RD (the only remaining originally included species) is a synonym. The literal construction of the opinion may not accord.

Leptotachina BB.—Genotype, LEPTOTACHINA BRAUERI Townsend, new name for *Tachina gratiosa* BB (nec. Mg.) preocc., 1891, Musc. Schiz. II, 26. Named in honor of Friedrich Brauer.

Macquartia RD.—Rondani's designation (1856) of *chalconota* is invalid since he mentioned no originally included name. Coquillett's designation (1910) by quotation is at once excluded by his mention of two originally included names. The genotype designated in the present paper accords with Brauer and Bergenstamm's sense.

Marsilia Monceaux.—This MSS. name, first published in footnote to page 535, vol. II, Posth., can not be accredited to Desvoidy but only to Monceaux, since the footnote was writ-

ten by the editor of the work. Being published as equal to an indeterminate part of *Onesia* RD, it must take same genotype.

*Myiophasia* BB.—Genotype, *MYIOPHASIA AUSTRALIS* Townsend, new name for *Tachina ænea* Wd. (nec Mg.) preocc., 1830, Auss. Zweifl. Ins. II, 298.

*Pachymyia* Mcq.—Genotype, *PACHYMYIA MACQUARTII* Townsend, new name for *Stomoxys vexans* Mcq. (nec Wd.) preocc., 1843, Dipt. Exot. II (3), 272, pl. 14, f. 3. Named in honor of Jean Macquart. Brauer and Bergenstamm examined the holotype of *Stomoxys vexans* Wd. and state that it is not Macquart's species.

*Parachaeta* Coq.—Genotype, *PARACHÆTA FUSCA* Townsend, new name for *Blepharipeza bicolor* Coq. (nec Mcq.) preocc., 1897, Rev. Tach. 123; equals *Blepharipeza inermis* Coq. (nec Bigot), 1897, l. c., and 1910, Proc. U. S. Nat. Mus., XXXVII, 583. Holotype, No. 20107, U. S. Nat. Mus., male, labeled "N. Y." and bearing Coquillett's label "Parachaeta inermis Bigot." Does not agree at all with Bigot's description.

*Paralucilia* BB.—Genotype, *PARALUCILIA BRAUERI* Townsend, new name for *Calliphora fulvipes* BB (nec Mcq.) preocc., 1891, Musc. Schiz. II, 87. Named in honor of Brauer, who has explained (Sitz. Ak. Wiss. CIV, 599) how the misidentification occurred. The holotype is a female on same pin with a male of *Calliphora fulvipes* Mcq., in the Vienna Museum. The statement on page 645, Journ. Wash. Acad. Sci., V, needs revision.

*Thelesina* Monceaux.—What is said above under *Marsilia* Monceaux applies here word for word.

#### *Chrysosomopsis*, new genus.

Genotype, *Tachina aurata* Fall., 1820, Dipt. Suec. Musc. 25, 52.—Europe. This is Brauer and Bergenstamm's sense of *Chrysosoma*, fig. 251 (1889). For characters, see Musc. Schiz. I, 66.

#### *Discochætopsis*, new genus.

Genotype, *Discochæta incana* BB., 1891, Musc. Schiz. II, 51; and 1893, Ibid. III, 63.—Austria. This is Brauer and Ber-

genstamm's sense of *Discochæta* p. p. (1891-93, not 1889). For characters, see BB., I. c.

**Eumedoria**, new genus.

Genotype, *Tachina digramma* Mg., 1824, S. B. IV, 346.—Europe. This is Brauer and Bergenstamm's sense of *Medoria*; also Meigen's sense S. B. VII, 203, sect. *b*, p. p. (not Desvoidy's sense). For characters, see BB., Musc. Schiz. I, 41; III, 78.

**Euphania**, new genus.

Genotype, *Phania vittata* Mg., 1824, S. B. IV, 219.—Europe.—This is Brauer and Bergenstamm's sense of *Phania*, fig. 291 (1889). For characters, see BB., Musc. Schiz. I, 75.

**Hineomyia**, new name.

Genotype, *Nemoræa setigera* Coq. Proposed in place of *Hinea* Townsend, January, 1916, Proc. U. S. Nat. Mus., XLIX, 629, preocc. by Adams, 1905, in Tabanidae.

**Prohypostena**, new genus.

Genotype, PROHYPOSTENA BRAUERI Townsend, new name for *Tachina procera* Rdi. (nec Mg.) preocc., 1859, Prod. IV, 84.—Europe. Named in honor of Brauer. This is Brauer and Bergenstamm's sense of *Hypostena*, fig. 100 (1889); also Ron-dani's and Macquart's sense. For characters, see BB., Musc. Schiz. I, 37; III, 63.

**NOTES ON THE LIFE HISTORY OF ECPAN-  
THERIA ERIDANUS CRAMER**

BY R. H. VAN ZWALENBURG

This arctiid is fairly common throughout the island of Porto Rico and has a wide variety of host plants. Food plants on which the larva has been taken are: orange, *Erythrina micropteryx* ("bucare," "madre de cacao"), *Ipomæa* sp., vanilla, banana, *Cissus* (?) *sicyoides* and *Panicum* sp. At the experiment station the larvae have done some damage by feeding on the blossom-buds of vanilla. "Malojilla" grass (*Panicum*